

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior version and listings of claims in the application:

1. (Previously Presented) An exhaust heat power generation apparatus comprising:

a thermoelectric converting unit, having a first value of rigidity, that converts thermal energy of exhaust gas into electric energy;

a heat exchange unit, having a second value of rigidity, provided on one surface of the thermoelectric converting unit to conduct the thermal energy of the exhaust gas that flows through an exhaust pipe; and

a cooling unit, having a third value of rigidity, provided on the other surface of the thermoelectric converting unit to cool the thermoelectric converting unit, wherein the third value of rigidity is higher than the first and second values of rigidity.

2. (Previously Presented) The exhaust heat power generation apparatus according to claim 1, wherein:

the heat exchange unit includes a heat exchange fin for conducting the thermal energy of the exhaust gas and a base having one surface on which the heat exchange unit is placed, and the other surface on which the thermoelectric converting unit is placed;

the exhaust pipe includes a main body that forms a frame of an exhaust passage to which the base is attached, and the heat exchange fin provided therein;

the exhaust passage is constructed by the exhaust pipe and the heat exchange unit; and

the base has a fourth value of rigidity higher than a rigidity value of the exhaust passage.

3 (Original) The exhaust heat power generation apparatus according to claim 2, wherein the main body of the exhaust pipe is formed of a material exhibiting a thermal expansion ratio lower than that of the heat exchange unit.

4. (Original) The exhaust heat power generation apparatus according to claim 3, wherein the main body of the exhaust pipe is formed of a stainless steel.

5. (Previously Presented) The exhaust heat power generation apparatus according to claim 2, wherein:

the main body of the exhaust pipe is provided in a center of the exhaust heat power generation apparatus, the thermoelectric converting unit is provided on an outer periphery of the heat exchange unit attached to the main body of the exhaust pipe, and the cooling unit is provided on an outer periphery of the thermoelectric converting unit;

an elastic member is provided on an outer side of the cooling unit; and
an elastic system for fixing the thermoelectric converting unit is formed, in which a pressure is applied to the cooling unit externally by the elastic member.

6. (Original) The exhaust heat power generation apparatus according to claim 5, wherein:

the thermoelectric converting unit includes a module formed of a plurality of thermoelectric elements; and
a unit of the elastic system is structure based on the module.

7. (Previously Presented) The exhaust heat power generation apparatus according to claim 5, wherein the elastic member includes a spring and a compression member which are one of in point contact and line contact with each other.

8. (Original) The exhaust heat power generation apparatus according to claim 2, wherein the heat exchange fin in the exhaust pipe has different pitches among fins thereof.

9. (Original) The exhaust heat power generation apparatus according to claim 8, wherein the heat exchange fin is formed of a material partially exhibiting different heat conductivities.

10. (Previously Presented) The exhaust heat power generation apparatus according to claim 2, wherein each of the heat exchange unit and the main body of the exhaust pipe has a variable configuration such that a direction in which the heat exchange unit deforms becomes opposite to a direction in which the main body of the exhaust pipe deforms.

11-15. (Cancelled)

16. (New) The exhaust heat power generation apparatus according to
claim 1, wherein the cooling unit contacts the thermoelectric converting unit.